CLAIMS

1. A method of processing a data transmission sent as a plurality of bursts in a wireless communication system, comprising:

scaling input soft metrics for each of the plurality of bursts based on statistics for the burst to obtain scaled soft metrics for the burst; and

rescaling the scaled soft metrics for each of the plurality of bursts based on the statistics for the burst and the statistics for the plurality of bursts to obtain rescaled soft metrics for decoding.

2. The method of claim 1, wherein the input soft metrics are log likelihood ratios (LLRs).

3. The method of claim 1, wherein the input soft metrics are multi-bit values obtained for transmitted code bits.

4. The method of claim 1, wherein the statistics for each of the plurality of bursts include a mean for the input soft metrics for the burst.

5. The method of claim 4, wherein the statistics for each of the plurality of bursts further include a variance for the input soft metrics for the burst.

6. The method of claim 1, further comprising:

determining a scaling factor for each of the plurality of bursts based on a mean of the input soft metrics for the burst, and wherein the input soft metrics for each burst are scaled based on the scaling factor for the burst.

7. The method of claim 6, wherein the scaling factor for each of the plurality of bursts is further determined based on a variance of the input soft metrics for the burst.

8. The method of claim 1, further comprising:

quantizing the scaled soft metrics for each of the plurality of bursts based on the statistics for the burst to obtain quantized soft metrics for the burst, and wherein the rescaling is performed on the quantized soft metrics.

9. The method of claim 8, wherein the scaling and quantizing are performed with one arithmetic operation on the input soft metrics using one scale factor.

10. The method of claim 1, wherein the rescaling includes

determining a common scale factor based on the statistics for the plurality of bursts,

determining a scale factor for each of the plurality of bursts based on the statistics for the burst, and

rescaling the scaled soft metrics for each of the plurality of bursts based on the scaling factor for the burst and the common scale factor.

11. The method of claim 8, wherein the rescaling includes

determining a common scale factor based on the statistics for the plurality of bursts,

determining a quantization scale factor for each of the plurality of bursts based on the statistics for the burst, and

rescaling the quantized soft metrics for each of the plurality of bursts based on the quantization scale factor for the burst and the common scale factor.

12. The method of claim 1, further comprising:

storing rescaled soft metrics for a first transmission of the plurality of bursts;

deriving rescaled soft metrics for a second transmission of the plurality of bursts; and

scaling and combining the rescaled soft metrics for the first transmission and the rescaled soft metrics for the second transmission to obtain combined rescaled soft metrics for decoding.

13. The method of claim 1, wherein the wireless communication system is a Global System for Mobile Communications (GSM) system.

14. The method of claim 1, wherein the plurality of bursts are transmitted in non-continuous time intervals.

15. An apparatus in a wireless communication system, comprising:

a scaling unit operative to scale input soft metrics for each of a plurality of bursts based on statistics for the burst to obtain scaled soft metrics for the burst, wherein the plurality of bursts are for a data transmission received via a wireless channel; and

a rescaling unit operative to rescale the scaled soft metrics for the plurality of bursts based on the statistics for the burst and the statistics for the plurality of bursts to obtain rescaled soft metrics for decoding.

16. The apparatus of claim 15, further comprising:

a quantizing unit operative to quantize the scaled soft metrics for each of the plurality of bursts based on the statistics for the burst to obtain quantized soft metrics for the burst, and wherein the rescaling unit is further operative to rescale the quantized soft metrics.

17. An apparatus in a wireless communication system, comprising:

means for scaling input soft metrics for each of a plurality of bursts based on statistics for the burst to obtain scaled soft metrics for the burst, wherein the plurality of bursts are for a data transmission received via a wireless channel; and

means for rescaling the scaled soft metrics for the plurality of bursts based on the statistics for the burst and the statistics for the plurality of bursts to obtain rescaled soft metrics for decoding.

18. The apparatus of claim 17, further comprising:

means for quantizing the scaled soft metrics for each of the plurality of bursts based on the statistics for the burst to obtain quantized soft metrics for the burst, and wherein the rescaling is performed on the quantized soft metrics.

19. A processor readable medium for storing instructions operable in a wireless device to:

scale input soft metrics for each of a plurality of bursts based on statistics for the burst to obtain scaled soft metrics for the burst, wherein the plurality of bursts are for a data transmission received via a wireless channel; and

rescale the scaled soft metrics for the plurality of bursts based on the statistics for the burst and the statistics for the plurality of bursts to obtain rescaled soft metrics for decoding.

20. A method of processing a data transmission sent as a plurality of bursts in a wireless communication system, comprising:

determining a scaling factor for each of the plurality of bursts based on statistics for the burst;

scaling input soft metrics for each of the plurality of bursts with the scaling factor for the burst to obtain scaled soft metrics for the burst;

quantizing the scaled soft metrics for each of the plurality of bursts based on a quantization scale factor for the burst to obtain quantized soft metrics for the burst;

determining a common scale factor based on quantization scale factors for the plurality of bursts; and

rescaling the quantized soft metrics for each of the plurality of bursts based on the quantization scale factor for the burst and the common scale factor to obtain rescaled soft metrics for decoding.

21. The method of claim 20, wherein the scaled soft metrics for each of the plurality of bursts are quantized to M bits, where M is an integer greater than one.

22. The method of claim 21, wherein the quantization scale factor for each of the plurality of bursts is selected to quantize the scaled soft metrics for the burst to full range of the M bits.

23. The method of claim 20, wherein the scaling factor and quantization scale factor for each of the plurality of bursts are determined based on a mean of the input soft metrics for the burst.

24. The method of claim 23, wherein the scaling factor and quantization scale factor for each of the plurality of bursts are further determined based on a variance of the input soft metrics for the burst.

25. The method of claim 20, wherein the scaling and quantizing for each of the plurality of bursts are performed with one arithmetic operation on the input soft metrics for the burst using one composite scale factor that includes the scaling factor and the quantization scale factor for the burst.

26. The method of claim 20, wherein the common scale factor is equal to a maximum quantization scale factor for the plurality of bursts if the number of bursts with signal quality above a predetermined threshold is less than a threshold number.

27. The method of claim 20, wherein the common scale factor is set based on an average of quantization scale factors for bursts with signal quality above a predetermined threshold.

28. The method of claim 20, further comprising:

requantizing the rescaled soft metrics for the plurality of bursts to obtain requantized soft metrics; and

deinterleaving and decoding the requantized soft metrics for the plurality of bursts.